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ABSTRACT

Abraham Kaplan has produced the clearest philosophical insights in all of library literature into the real nature of library education by providing an outsider's view of librarianship that (1) explains the "mess" librarians are in; (2) identifies humanism as the firm foundation of their profession; and (3) correlates librarianship with the metasciences. In "The Age of the Symbol--A Philosophy of Library Education," Kaplan has shown that the major problems of librarianship are problems of symbolism, communication, and the intellectual disciplines. These problems go unresolved, however, because librarians continue to confuse symbols with symbolic referents, scientific with humanistic approaches to communication, and empirical with intellectual disciplines. The result is a crippling paradox in which the librarians, who ought to be leading in librarianship, want to be followers, and the information scientists, who should be following, want to be leading. This paradox can only be resolved by a truly comprehensive theory of communications that integrates the realities at both ends of a wire connecting human beings to their physical and cultural environments, a theory that explains all of their complex interactions with both of those environments. (LMM)

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# THE MISINTERPRETATION OF A KEY PAPER IN LIBRARY LITERATURE

by

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The Misinterpretation of a Key Paper in Library Literature

By H. Curtis Wright

Abraham Kaplan has produced the clearest philosophical insights in all of library literature into the real nature of library education.[1] He has done this by providing an outsider's view of librarianship, a view that (1) explains the mess librarians are in, why they are in it, and how best to clean it up or learn to live with it; (2) identifies humanism as the firm foundation of their profession, which strongly suggests that librarianship cannot sustain the scientific superstructure the post-war librarians have imposed upon it; and (3) correlates librarianship with the meta-sciences, disciplines that study the intellectual structures, immaterial order relations, and noetic forms which constitute the spiritual pattern-world of human thought. This is the philosophy Shera has recommended to the library educators, whose half-hearted efforts to follow it have been ambivalent and unsuccessful because of their notorious inability to understand philosophical discourse.[2] Our own brilliant attempts to penetrate this philosophy in Shera's bailiwick at Case Western Reserve are a case in point: they went completely astray because none of us--and that includes both Shera and myself--knew enough about the history of the Western intellect to comprehend a great big, grown-up philosopher like Abraham Kaplan.[3] But the Kaplan philosophy can indeed be understood. It may be simplified, perhaps, by ignoring his provocative asides on such crucial matters as the similarities of librarianship and philosophy, the myth of a natural logic, and the law of the instrument.[4] From this point on, at any rate, we shall overlook these important secondary issues, which deserve serious consideration in their own right, in order to concentrate on Kaplan's primary discussions of the fundamental problem, the basic foundation, and the occupational alignment of librarianship.

The fundamental problem of librarianship.[5]--Today's librarians work feverishly on something called "information" without knowing what it is, what it is for, or what to do with it. This passion for information, which has flourished in the near-total absence of knowledge about information since World War II, has brought them to their current "critical condition." Their condition is critical, moreover, not by virtue of excessive demands on the performance of their functions: it is critical because "the profession itself is now unsure of what its functions are," and because the librarians are "unsure also of just how to go about performing whatever functions are assigned to it or...it adopts." Their condition is crippling, too, because they have attempted to develop a professional technique without realizing that technique is dependent on function, and function is determined by structure. Professionalism

can exist, in other words, only if there are specific functions to perform; and the workers who would perform those functions professionally must understand them in terms of their ontological structures (what the work to be done actually is), occupational purposes (what the work is for), and operational procedures (the best ways of performing the work).[6] You cannot create a professional technique by selecting "the best...tools and materials to use and the best methods of using them unless you have first formed...a clear and detailed idea of what it is you are setting out to produce and what function it will have to perform."[7] This comes dangerously close to describing today's library profession, where the educators and administrators have failed to identify its specific occupational functions and the practitioners cannot perform them properly because nobody can explain in clear, unambiguous terms what librarianship is for and why the public it attempts to serve should find it useful.

This rather confused state of affairs, says Kaplan, is "entirely understandable" in view of some relatively recent developments derived from the modern knowledge explosion. These developments have transformed the twentieth century into an age of the symbol wherein "enormous changes at every level of modern society can be associated with the concept of information." (Italics his) Librarians, that is to say, have no monopoly on the information-related problems and headaches which permeate all of the Western cultures. Kaplan gives several reasons for this. There is, first of all, "the sheer volume of information," which makes it extremely difficult for anyone to keep up with keeping up in any field. In the early sixties, for example, something like ten million printed words a year were produced for every man, woman, and child in the United States alone![8] In conjunction with that remarkable phenomenon, which has never been attested for any other age, "there has also been a fantastic growth in the technology by [means of] which information is produced, processed, and transmitted" in the physical world. That is reflected in computer technology, to cite another example: it has been growing "by two orders of magnitude (i.e., a factor of 100) every five years, which is an extraordinary rate of growth." But the basic cause of all this, the reason for both the imposing volume of information and the unprecedented growth of informational technology, is the increasing involvement of the modern age with symbolism. There is no doubt, according to Kaplan, that "symbols...occupy a larger part in our lives today than ever before," and that "the size of that part...is growing exponentially." The massive amounts of information available to us have had a tremendous impact on modern life, to be sure. But "theories about information," by which Kaplan explicitly means "theories about symbol processes," have continued to "exert a similar force," and indeed constitute one of the basic cultural realities of the twentieth century--of which information and its technologies

are merely the expressions. "From the standpoint of the theory of ideas," which is Kaplan's standpoint throughout, everything suggests that "ours is the age of the symbol." (Italics his) As evidence of our deepening involvement with symbolism, he points to the "many intellectual disciplines" which have recently "come into being around processes of symbolization or have begun to focus...[on] the nature of language and symbolism."[9] He concludes that, given the context of relentless cultural change, it is "altogether understandable" that a profession like librarianship, which is "occupied centrally with precisely what underlies all these changes," should be "engaged in a search for some fixities in this flux, and concerned with re-examining the means...for the achievement of its purposes;" and he adds that "the problem of the profession is indeed a genuine problem and is a piece with a comparable problem...-faced by many other professions...[and] by our society as a whole."

Comment on the fundamental problem of librarianship.--These pertinent remarks require explanation, lest we misinterpret the key elements of Kaplan's thought. It is clear, for example, that he distinguishes sharply between (1) the formal abstractions of information, or the ideas which exist in an objective but nonphysical way as the intellectual products of human minds, and (2) the physical manifestations of information, or the symbolic data by means of which immaterial ideas are expressed and communicated in the material world. When Kaplan speaks of "the sheer volume of information," therefore, he is plainly talking about ideas. When he discusses "the technology by which information is produced, processed, and transmitted," however, he is just as plainly talking about the ways in which symbolic data, or the physical manifestations of ideas, are brought into the social order and utilized as instruments of communication. Virtually everybody uses the word "information" in both of these senses without distinguishing them. But the difference between ideas and their manifestations is absolutely essential to understanding Kaplan's thought, and that raises a whole raft of informational questions about the psychophysical nature of the human involvement with symbolism.

What is information, anyway? We know it does things to people, but specifically what does it do to them? And what do they do to it? The scientist cannot ask questions like these, to say nothing of answering them, because they don't fit the models of scientific inquiry. But philosophically speaking, we can ask such questions, and at least attempt to answer them, by taking some important cues from twenty six hundred years of intellectual history. Does information ultimately reduce to something physical in the empirical world of matter and energy? Or does it reduce to a nonphysical something in the intellectual pattern world of immaterial forms? Our answer to these questions will disclose the presuppositions that dominate our thinking about informa-

tion. We can clarify those presuppositions through a painful process of critical introspection--or let them slumber in a confused tangle of cobwebs from our empty skulls. The result is similar (though not identical) either way. If we assume, subconsciously or otherwise, that information is empirical data of some sort, we have consigned its fate to matter-philosophy, which flows in an unbroken stream all the way from Democritus to modern science; and that assumption will then consign us to the scientific study of information conceived as nonsymbolic realities within the physical environment. If we assume, on the other hand, that information is ideas, it belongs to form-philosophy, which flows directly from Socrates and Plato into the Western humanities tradition; and this assumption commits us to the study of information conceived as symbolic realities in the human cultural environment. These two assumptions and the studies they imply are not perforce antithetical. Informationally speaking, however, they are very different, as science analyzes the behavior of physical symbols whereas humanistic study proceeds by recognizing the meaning of symbolic referents. The physical symbol and its ideative referent thus constitute the basic elements of symbolism, which underlie all forms of human communication. But symbol and referent, by belonging to different orders of reality, have created different theoretical orientations to the study of information. Scientific theories of the physical symbol, which previously dominated our thinking about communications, are paralleled today by humanistic theories of the symbolic referent. Both require considerable adjustment in order to accomodate each other, and that is precisely Kaplan's point: the twentieth century has become increasingly immersed in this whole problem of symbolism and is currently struggling to stay afloat in it. What is needed is a truly comprehensive theory of communications that integrates the realities at both ends of a wire connecting human beings to their physical and cultural environments--a psychophysical theory that explains all of their complex interactions with both of those environments. It is no small task, meanwhile, to avoid electrocution in the short circuit caused by two kinds of information derived from radically different orders of reality.

Two additional points should be noted. First, Kaplan's remark about "intellectual disciplines," which explore the symbolic environment of human thought, can only be understood by comparison and contrast with the empirical disciplines, which investigate the nonsymbolic environment of physical reality. The latter are not exactly anti-intellectual, of course, as both make use of symbolism in order to pursue their investigations.[10] But the empirical disciplines always produce <u>intellectual knowledge of realities that can be observed</u>, no matter how indirect and theoretical such knowledge may become. The intellectual disciplines, on the other hand, can only create <u>knowledge of intellectual realities that cannot be observed</u>, although they can be thought and

communicated as thought: no one has ever seen an inverse proportion or the square root of minus one, for example, nor can they split infinitives as though they were firewood or dangle participles from trees. Here is another important distinction the information professionals have overlooked. They have confused knowledge about phenomena, or the intellectual knowledge of physical realities required by science, with knowledge about knowledge, or the knowledge of intellectual realities required by librarians.[11] "Human knowledge," says Kaplan, "is something which is known to very, very few human beings"--although it is used by everybody.[12] That clearly states the unmet knowledge requirement of librarianship, which is not concerned with realities: it is concerned with human subjective reports about realities, whether the realities reported on are empirical or intellectual. Second, librarians and their educators have never had the stomach for identifying the fundamental problems of librarianship, much less for meeting them head-on. Kaplan is correct in stating that librarianship should be "occupied centrally with precisely what underlies all these changes," which have caused an information revolution of unprecedented proportions. But he is dead wrong in assuming that the library profession has ever been seriously "engaged in a search for...fixities in this flux," or that it is seriously "concerned with re-examining the means...for the achievement of its purposes." It has never clarified its functions and purposes in the first place, nor has it ever examined the means of performing or achieving them. The profession needs to be overhauled by completely restructuring itself from the ground up, not "by merely doing more intensively and extensively that which has been done in the past,"[13] or worse still, by striving diligently to improve what it should not be doing. "There is little evidence," however, "that such a revolution is in the making," or is likely to occur in the future.[14] Librarianship is currently being dehumanized by information science, with its strong empirical emphasis on physical symbols and its corresponding inability to deal with the intellectual realities of symbolic referents. The real concern of the library profession, since the blind are clearly leading the blind today, is how either or both can avoid falling into the ditch.

The basic foundation of librarianship.[15]--Symbolism, which creates the central problem of librarianship, also sounds "the keynote of all humanistic problems," whose function is to clarify our subjective questions "instead of obscuring them as traditional scientific methods have done."[16] The human use of symbols during the Golden Age is in fact responsible for introducing the new outlook of form-philosophy into the Western intellect--an outlook derived from its humane concern for the symbolic forms of Athenian immaterialism, not from its scientific interest in the cosmos. Western thought began as matter-philosophy in Ionia and continued as matter-philosophy in southern Italy; but it ended by boarding an Athenian teeter-totter balanced on

the shoulders of Socrates on which it has teetered and tottered ever since. Socrates, the founder of humanism, is indeed the fulcrum of the Western philosophical tradition: before Socrates all philosophers were materialists--including the Pythagoreans, whose scientific formalism was devised for solving problems related to the cosmos;[17] with Socrates, however, the materialists were confronted for the first time by the genius of a superb form-philosopher; and from that day to this the scientific materialists and humanistic formalists of philosophy have been obliged to glare down (or up, or across) their teeter-totter at each other. The materialists, that is to say, ruled the philosophical roost before coming to Athens, where the formalists put them on the teeter-totter and controlled its use for over two thousand years. The materialists overpowered the formalists in the scientific revolution of the seventeenth century A.D., however, and have since occupied the business end of the teeter-totter. But Socrates has made it forever impossible for the people of any Western culture to maintain an exclusive scientific interest in the world they live in without wondering about the world that lives in them. The Western intellect has thus retained its dual concern for (1) the nature of the universe and (2) the nature of man, interests which continue to exhaust the concerns of philosophy. There is no possibility at all, therefore, that ancient form-philosophy will ever go away simply because modern matter-philosophy doesn't like it. There is some evidence, moreover, that radical materialism has declined somewhat--not much, perhaps, but somewhat--with the rise of modern interest in symbolism. For the most part, however, that has been a kind of neo-Pythagorean concern for scientific formalism, which means that the knowledge problems of science are still getting most of our attention.

Kaplan, who understands the folkways of the Western intellect, argues that librarianship and library education must ultimately come to grips with the form-philosophy of critical humanism. He rejects, of course, the silly argument of C. P. Snow's "Two Cultures," which boils down, really, to the specious proposition that scientists could resolve all of our problems if the humanists would only be reasonable.[18] But "the humanistic basis is there," according to Kaplan, who insists that it "will and must remain as a basis." This illuminates the knowledge orientation of librarians: their need to know about the actual uses human beings make of information "must always remain fundamental" to the humanistic business of librarianship because it is fundamental to humanism itself. That need cannot be met by scientific knowledge about external nature. It calls, rather, for knowledge of human nature, and that, says Kaplan, "is nothing other than knowledge of people, "or more specifically, knowledge "of the various things that people do and of the various ways in which in the course of those doings they generate and transmit and interpret ideas or information." (Italics mine) These remarks carry two important implications. First,

librarians require an instrumental knowledge of human behavior as the human means of dealing with information; but they do not require scientific knowledge of human behavior per se. Secondly, Kaplan is not talking about information as data in the form of graphemes (visible squiggles on paper), phonemes (audible wrinkles in the atmosphere), electro-chemical impulses (the circuitry of our nervous systems and computers), or the like; he is thinking of information as ideas and struggling to understand (1) how human beings bring ideas into existence, (2) how human beings communicate the ideas they bring into existence, and (3) how human beings interpret the ideas they bring into existence and communicate.

This repeated emphasis on information as ideas leads Kaplan to the plausible conclusion that students of librarianship should be grounded in knowledge about knowledge by getting to know ideas. He therefore supposes that, "sometime in the course of training," the library school student will have studied (1) the sociology of knowledge, (2) the history of ideas, and (3) the structure of inquiry, "not merely in some area...of special interest to him but in broad historical and cultural terms." And he further supposes that library education not only contains humanistic "beliefs about what men are like...and how they make use of ideas" but also includes humanistic values. "I would think," he says, "that an inculcation of the love of learning, of the love of ideas, of the love of truth, and even of the love of books, is an entirely appropriate part of the training in this profession." But Kaplan completely missed the boat in terms of the former supposition--and partially misses it as to the latter--because library educators have always excluded intellectual studies of this sort from their curricula. Most of them have never heard of Karl Mannheim, for example, who created the sociology of knowledge in order to study the impact of social organization on ideas; nor have they ever taken seriously the social epistemology proposed by Jesse Shera (the mirror obverse of Mannheim), who urged the library profession to study the impact of ideas on social organization.[19] It goes without saying, furthermore, that philosophy and intellectual history have never been compatible with the ultrapragmatic interests of librarians and their educators, who therefore continue to avoid the history of ideas as though it were the plague. And the current addiction of library educators to the scientific model of "research" is tragically interesting: they don't know, apparently, that there is a very real difference between the intellectual structure of inquiry and its functional procedures. They have therefore opted en bloc for the researcher's view of critical inquiry by attempting to drill an ability to manage the content and outcomes of research into the heads of students because their interests are overwhelmingly utilitarian. The library schools seemingly assume, in other words, that employers expect the librarians they hire to pursue their own

research interests. But Kaplan's emphasis on "the structure of inquiry" is slanted toward the observer's view of research precisely because librarians are not researchers: they are, or should be, critical observers of research whose function is to attend the research interests of other people as research counselors. They cannot do that properly, however, unless they know which of the many intellectual strategies of research are and are not compatible with the specific research interests of their patrons. Thus, Kaplan's emphasis is squarely on the thinking which underlies all forms of research, not on the mechanical procedures and physical apparatus that grind the functional content of "scientific" research into practical results and conclusions. And finally, the intellectual loves of ideas, learning, and truth are indeed appropriate values for librarians. But "regrettably," says Shera, "Kaplan weakens this admirable list by adding '...the love of books.'"[20] Shera's point is that professional librarians must think in terms of their intellectual functions, not in terms of their communicative tooling: when they swoon with ecstasy over a monograph they are like emotional mechanics who go into raptures at the sight of rachets and end wrenches.

Comment on the basic foundation of librarianship.--The profession has not followed Kaplan's humanistic recommendations. It has followed instead the poor advice of information science, which stems from an empirical commitment to the modern version of ancient materialism. "The librarians talk glibly of library science, and indeed strive to endow it with scientific principles." But they ignore the double fact that librarianship "has emerged from a humanistic tradition," and that "its fundamental concern is with the communication of...ideas," not with the transmission and reception of signals.[21] Librarians have traditionally confused the intersubjective communication of ideas with the objective problem of transmitting physical symbols through time and space. This confusion can be substantially reduced by thinking about the use of a flag as a communicative instrument. The flag itself is a sign, a mere physical symbol: if I use the flag to mean something, however, it becomes a signal; but it has no symbolic significance unless you know what my use of the flag means. Let us be clear on this: human communication is subjectively determined because "it is the receiver who causes messages to have their meaning and significance and...to have effects upon him."[22] Communication, that is to say, is inherently and essentially humanistic. But the postwar librarians have sacrificed their essential humanism on the altar of high technology by capitulating to systems theory, the scientific way of accounting for human communications. They know virtually nothing, meanwhile, about symbolic interactionism--a very real alternative to systems theory, which provides the humanistic account of communications. There are thus two theoretical perspectives on the same thing, for systems theory and symbolic interactionism are not merely

rival theories of communication: they are radically different approaches to the whole problem of theorizing about human communications. The scientific and humanistic perspectives thus constitute the necessary dipoles of communications theory which serve as the general orientations for all possible theories of communication. It is clear, therefore, that general systems theory, which deals with the controlled manipulation of physical symbols, can never replace symbolic interactionism, which investigates the psychophysical interaction of physical symbols with their symbolic referents.[23]

Information science is based on the instrumental thinking of scientific matter-philosophy, not on the critical form-philosophy which nourishes librarianship. The failure of librarians to realize this has resulted in the scientific dehumanization of librarianship since World War II. General system theory, cybernetics, and information theory are all included in systems theory, which is derived from the physical thinking of scientists like Bertalanffy, Wiener, Shannon, Weaver, von Neuman and Morgenstern. A close look at systems theory reveals the physical outlook of its components. (1) General system theory was never intended for application to formal disciplines. It is described as " a new scientific discipline" by its founder, Ludwig von Bertalanffy, who calls it "a logico-mathematical discipline, in itself purely formal but applicable to the various empirical sciences."[24] The society he founded has also stated that "most systems in which we are interested consist of physical parts: atoms, stars, switches, masses, springs, wires, bones, neurons, genes, muscles, gases, etc."[25] (2) Cybernetics attempts to control the physical behavior of mechanical systems, whether that behavior is neurobiological, socioeconomic, electrochemical, or otherwise. "It is thus essentially functional and behaviouristic," according to Ashby, because it constitutes a physical "theory of machines." It therefore "deals with all forms of behaviour in so far as they are regular, or determinate, or reproducible, since "it takes as its subject-matter the domain of 'all possible machines.'"[26] (3) Information theory concentrates on the sending and receiving of electronic signals. It "is not concerned with information at all--in the orginary sense." It is therefore "concerned with only the technical problem of getting symbols...from one place to another without distortion," and "does not relate directly to the interpretation of those symbols."[27] Thus, information theory "was never quite applicable to human communication systems," because Shannon, who completely excludes the human communicator from his mathematical model of human communications, "made some assumptions [about the mechanical senders and receivers of information] that are not exactly tenable for human systems."[28] Those mechanistic assumptions, notwithstanding the optimistic bravado of information theorists, have severely limited the potential of information theory. Its purpose is to create a mechanical system which functions as the means of providing access to ideas; but the design, production, implementation, and control

of the system get all of its attention. The schools of librarianship and information science are therefore turning out "control artists"--the data mechanics who tinker with information systems but stumble over the access problem because they can't control ideas. Our so-called "information systems" are really only data systems, according to Thayer, because they "map the flow of data to and from humans or machines."[29] We therefore "need to distinguish between information systems," which cannot communicate ideas, "and communication systems," which do not communicate data: they are plainly different things, because a communication system can exist as an idea system only if the output of some data system is subjectively interpreted by the self-conscious intelligence of a human being.[30]

The scientific lust for data, furthermore, has converted the old linguistic concept of information-as-ideas into the new mathematical concept of information-as-data. But the new concept of information, which was invented by telephone engineers, has never had anything to do with information in the ordinary sense of the term. "It is not...information as we usually understand it," says Miller, who always uses the word "in the technical sense first suggested by Hartley in 1928, and later developed by Shannon in his mathematical theory of communication." Information in the technical sense refers to "the degrees of freedom that exist [for a mechanical transmitter] in a given situation to choose among signals, symbols, messages, or patterns to be transmitted."[31] The physical symbol, in other words, has no symbolic referent in Hartley's technical concept of information, which "relates only to the signs themselves and does not relate to what they 'mean'." Hartley thus defined information, like Miller and others who followed him, as the transmitter's "successive selection of signs, rejecting all meaning as a mere subjective factor" and insisting that "the signs must not be confused with the things they 'stand for.'"[32] This way of thinking about information has nothing whatever in common with thinking about ideas. It was originally conceived in completely physical terms by Hartley, who, "in estimating the capacity of the physical system to transmit [what he called] information," argued that "we should ignore the question of interpretation," because "by this means the psychological factors...are eliminated and it becomes possible to set up a definite quantitative measure of information based on physical considerations alone."[33] That is exactly what happened with the rise of information theory: information as the invisible structure of thought suddenly became information as the observable functions of matter-energy; and behold, a word was no longer an abstraction with meaning, but "an acoustic or electrical disturbance which may be expressed as...an oscillographic record of a speech sound."[34] This is the technical concept of information originated by Hartley, developed by Shannon and Wiener, and refined by McGill and Ashby.[35] "It is a pity," laments Colin Cherry, "that the mathematical concepts

stemming from Hartley have been called 'information' at all."[36] That is precisely what reduces the study of mind to action theory: thought becomes process so scientists can live with it. By and large, today's information professionals are scientists who define information as "a property of data...produced by a process that produced the data." Their physical thinking is transparent and complete, for the information process "may be simply data transmission...; it may be data selection; it may be data organzition; it may be data analysis."[37] But data it must be, one way or another, or it isn't information. It is thus "the effectiveness of communications channels" that interests information science, which does not therefore address the formal abstractions of knowledge "and the impact of that knowledge on its coeval culture."[38] A system of human communications, however, is always defined by the subjectivity of its users; and human subjectivity is the one thing science cannot study objectively. In any system, therefore, if "the primary focus is upon the mechanical flow of messages" --even if human beings are found among its components--"it would still be termed an information system" which, by the technical definition of information as matter and energy, can transmit the physicality of data but cannot communicate the immateriality of ideas. Systems theory thus investigates the mechanical transmission of information-as-data; but librarians must live with the communication of information-as-ideas, which can only be accomplished by the symbolic interaction of data and ideas.

The question facing librarians today is not: "Is science relevant to librarianship?" The question is: "What kind of relevance does science have for librarianship?" And the answer is that science plays an instrumental role in subserving the functions and purposes of the profession. Science can help librarians with their communicative tooling, in other words; but that's all it can do for them, because science belongs in the toolbox--not in the driver's seat--of librarianship. Information science, however, has never accepted its instrumental status in librarianship. It therefore rejects even the slightest hint of an ancillary role for science, and asserts the scientific doctrine of instrumental knowledge as a means of subordinating librarianship to its own functions and purposes. The result is a power struggle in which information science has emerged victorious, and librarianship has been subjected to the indiscriminate pursuit of scientific objectives for their own sake. Librarianship is currently selling out to information science in all of this; and the librarians are fast forgetting, if they have not already forgotten, that "science is a subculture among subcultures,"[39] that it is only one way of thinking about the world, and that there are indeed other ways of thinking and other things to think about.

The occupational alignment of librarianship.[40]--Kaplan has consistently argued that library science is an intellectual discipline based on form, not an empirical discipline based on matter and energy. Its foundation, therefore, is also intellectual

as in the humanities, not observational as in the sciences. "This intellectual foundation," he now says, "can be provided by nothing other than the...metasciences," specifically because the metasciences are intellectual disciplines that study mentation itself rather than merely using it to study something else. But those remarks also require explanation. When he refers to "the mathematical sciences as a basis for library education," for example, he is not saying that librarianship is some sort of geometry or algebra: he is saying, instead, that the studies of librarianship and mathematics (as opposed to their applications) are similar because in either case you are studying formal order relations--not physical realities.[41] Lest we misinterpret Kaplan on this point, furthermore, we must also read very carefully the following important statement about the metasciences.

> These are sciences not about subject matters provided by man and nature, but about subject matters provided fundamentally by our ideas about man and nature, or by our language, or by our ways of transmitting and processing...information.... I mean disciplines like mathematics, logic, linguistics, semantics, and, in the narrower sense, theory of information, and maybe cybernetics.

Shera's seminars in library education really labored to understand that statement during the middle sixties. But we missed its significance by trying to distinguish the wrong things: no one can distinguish between (1) "sciences...about subject matters provided by man and nature" and (2) sciences about subject matters...about man and nature" because the former is ultimately the same thing as the latter. We were misled in part, perhaps, by editorial emphasis, which italicized the word "about." But the emphasis would be better placed if the italics were transferred to "ideas," since Kaplan's whole point is that the metasciences are form-oriented disciplines that study the structure of human thought, not matter-oriented disciplines that study the objects of sensation. The contrast he makes thus constitutes the fundamental distinction between (1) physical "subject matters provided by man and nature" and (2) formal "subject matters provided by our ideas about man and nature"--or about anything else. That is a distinction we can live with. It is a distinction, incidentally, that explains Kaplan's willingness to regard information theory and cybernetics as metasciences only "in the narrower sense": he doesn't want to confuse their primary concern for ideas with their secondary interests in technology.[42]

The metasciences mentioned by Kaplan include mathematics, logic, linguistics, semantics, information theory, and cybernetics. These disciplines "then range off into other related metasciences," which include most of the subject matters in art, literature, philosophy, and history. Collectively, they constitute the only defensible alternative for the knowledge business of librarianship, because turning away from the formal structure of knowledge means turning toward its empirical content. If the librarians go for content, however, they must either become encyclopedists who go

for all of it, or specialists who go for some of it. But neither version of the content option is acceptable, according to Kaplan, because encyclopedism "is a possibility that has forever vanished," whereas "a narrow specialism...would fail dismally" to perform the broad knowledge functions of the library profession. Librarianship, he insists, must be classed with the metasciences.

> ...They have this centrality...for an intellectual reason, because there is central to them the concept of structure, of order, of form, which seems...to be the central concern also of library science. I am unable to conceptualize any alternative. Either you are [humanists] interested in order, structure, form, or you are [scientists] interested in substance and content; and in the latter case, you must resign yourself to mastering some increasingly narrow subject area and to doing whatever you can...as little assistants or magic helpers...to the people working in the area.

C mment on the occupational alignment of librarianship.--Kaplan's placement of librarianship among the metasciences is sound because he correctly identifies its realities as formal and classifies them with the similar realities of its fellow disciplines, which are all derived from form-philosophy. But the postwar librarians have identified librarianship with information science, and the information scientists are "aligning themselves with the natural sciences, which deal with physical phenomena." The librarians, meanwhile, must "deal with ideas and knowledge and their communication; hence librarianship is much closer to the humanities than to the 'hard' sciences."[43] This contradiction between the humanistic realities of librarianship and the scientific outlook of the postwar librarians is currently tearing the profession apart. Metascience is constituted by the 'soft' sciences, in which you can't trust the numbers. But librarianship has always been a soft science, and no one can change that fact because you can't fight realities: you can only find out what they are and go along with them. The American librarians have accepted the tough-minded world view of William James, which belongs squarely in the mainstream of Western matter-philosophy. Their excessive pragmatism has thus far prevented them from formulating a defensible philosophy of librarianship because their formal problems cannot be resolved by physical theories. Nor have they been able to recognize the intrinsic merit of Kaplan's recommendations. The American system of librarianship is therefore short-circuited at the battery--which explains why there is currently no juice in the system, and why the physical methods of science are inappropriate for studying the formal realities of librarianship.

Conclusion.--There is something fundamentally wrong with librarianship today. Kaplan has shown us, more clearly than anyone else, what it is. Everyone knows that you can't build Zion by using the methods of Babylon. But we have tried to resolve the knowledge problems of form-philosophy with the physical methods of matter-philosophy, and it simply does not work. We have misinterpreted Kaplan, moreover, or

ignored him altogether, because he confronts us with our intellectual problems and invites us to think our way through them. But the hard-headed practical people, who will do anything to keep from thinking, have always panicked at the frightening prospect of using their heads. Shera once told me, for example, that the library administrators used to pat him on the head and say: "You're a nice boy, Jess; but run along and play with your philosophy--we've got a payroll to meet!" That attitude has proved our undoing. We can't buy our way out of the paper bag anymore because the budget has finally failed; and we are too weak to fight our way out of it. In the end, therefore, the hard way of critical reflection recommended by Kaplan is the only way open to us: we will have to stay in our paper bag or think our way out of it because we have no other choice. That is also Shera's conclusion:

> ...The great need of the library profession today is to formulate a professional philosophy that will meet the rapidly changing needs of society for recorded knowledge. We must re-define our role in society...[and] make of the library the agency it should be in the total communication process....
>
> We must put our intellectual house in order or we will lose control of many functions relating to the communication of the written word that are properly our own....This need lies at the base of every other problem of librarianship....I am deeply disturbed by the malaise that has so long gripped our profession, its shallowness, its sterility, its intellectual immaturity, and I see no remedy but to probe deeply, however great the pain.[44]

NOTES

"The Misinterpretation of a Key Paper in Library Literature"

[1]In his "The Age of the Symbol--a Philosophy of Library Education, "Library Quarterly, 34(1964), 295-304. Also appears in Don R. Swanson, ed., The Intellectual Foundations of Library Education...(Chicago: University of Chicago Press, 1965), 7-16, which we cite henceforth.

[2]Jesse H. Shera, The Foundations of Education for Librarianship (New York: Becker and Hayes, 1972), 357-58, where he states: "From this philosophy of library education... must be derived the objectives of the library school."

[3]When I later discussed some of our misinterpretations of Kaplan with Shera, he asked: "Why didn't you straighten us out in these things?" My reply was: "Because you kept me so busy with your doctoral program that I didn't have time to be reflective."

[4]Kaplan's asides also include the relation of words to meanings, research vs. re-search, semantic transportation, the two intellectual faculties, the mnemonic and educative functions of libraries, and much else.

[5]Discussed by Kaplan, "The Age of the Symbol," 7-8. All quotations in this section are from this source unless footnoted otherwise.

[6]I have discussed these matters at length in "Professionalism and the Socratic Paradox," Scholar and Educator, Spring, 1980, 5-11.

[7]W.K.C. Guthrie, The Greek Philosophers from Thales to Aristotle (New York: Harper & Row, 1960), 72.

[8]Kaplan, "The Age of the Symbol," 7, adding that "something on the order of 95 per cent of all the scientists who have ever lived are alive today--however broadly one chooses to define 'scientist.'"

[9]Ibid., 8, where he lists disciplines like philosophy, linguistics, and psychoanalysis, to mention only a few.

[10]Nevertheless, the observational stance of empiricism is often described as the systematic elimination from thought of everything that is properly intellectual. See, for example, W.E. Carlo, Philosophy, Science, and Knowledge (Milwaukee: Bruce, 1967), 18.

[11]On the librarian's need of knowledge about knowledge, as opposed to knowledge about realities, see Ralph A. Beals, "Education for Librarianship," Library Quarterly, 17 (1947), 297; and Shera, Foundations, 354.

[12]Kaplan, "The Age of the Symbol," 10. Italics mine.

[13]Shera, Foundations, 355.

[14]Ibid. 491. The statements in this and the previous footnote are about issues in American education generally, but they nevertheless have direct relevance to librarianship and library education.

[15]All quotations in this section, unless footnoted otherwise, are from Kaplan, "The Age of the Symbol," 12-13.

[16]Suzanne K. Langer, Philosophy in a New Key...(New York: New American Library, 1962), 32.

[17]We have pretty much failed to distinguish between (1) the scientific formalism of the Pythagoreans, (2) the confused formalism of Plato (who apparently wanted things both ways), and (3) the humanistic formalism of later times. The failure to make these distinctions has produced a lot of unnecessary nonsense in Western thought.

[18]See C.P. Snow, The Two Cultures and the Scientific Revolution (Cambridge: Cambridge University Press, 1959); F.R. Leavis, Two Cultures....(New York: Pantheon Books, 1963); and D.K. Cornelius and E. St. Vincent, Cultures in Conflict; Perspectives on the Snow-Leavis controversy (Chicago: Scott, Foresman, 1964), all passim. Cf. Shera, Foundations, 357.

[19]Social epistemology is discussed in Shera's Libraries and the Organization of Knowledge (Hamden, Conn.: Archon Books 1965), 12-17; in his Sociological Foundations of Librarianship (New York: Asia Publishing House, 1970), 82-110; and in E.B. Montgomery, ed., The Foundations of Access to Knowledge (Syracuse, N.Y.: Syracuse University, 1968), 7-25.

[20]Shera, Foundations, 357 n.40.

[21]J. H. Shera, "Philosophy of Librarianship," ALA Encyclopedia of Library and Information Services, eds. R. Wedgeworth [and others] (Chicago: American Library Association, 1980), 315, adding that, as the intangibles of thought "are embodied in physical objects...it is easy to mistake the physical object...as the [ideative] reality." Italics mine.

[22]B. D. Ruben, "General System Theory," in R. W. Budd and B. D. Ruben, eds., Interdisciplinary Approaches to Human Communication (Rochelle Park, N.J.: Hayden Book Co., 1979), 108. Italics mine. "Man can and must invent whatever significances he attaches to himself, his environment, and the people in it.... How man becomes organized determines what he sees, hears, believes, comes to know--his sense of what reality is.... Man creates the reality and environment he knows," ibid., 112.

[23]See Stephen W. Littlejohn, Theories of Human Communication (Colombus, Ohio: Charles E. Merrill, 1978), chaps. 1-3, 6. On the humanistic basis of symbolic interactionism see ibid., 56; H. Blumer, Symbolic Interactionism; Perspective and Method (Englewood Cliffs, N.J.: Prentice-Hall, 1969), 21n.; and J.F. Glass and J.R. Staude, eds., Humanistic Society; Today's Challenge to Sociology (Pacific Palisades, Calif: Goodyear, 1972), 185.

[24]Ludwig von Bertalanffy, General System Theory; Foundations, Development, Applications (New York: G. Braziller, 1972), 37.

[25]A. D. Hall and R. W. Fagen, "Definition of System," General Systems, 1 (1956), 18. Our present understanding of general system theory is largely derived from this society and its official journal, both founded by Bertalanffy.

[26]W. Ross Ashby, An Introducation to Cybernetics (New York: Wiley, 1956), 1-3, where he adds that "cybernetics stands to the real machine...much as geometry stands to the real object.... What cybernetics offers is the framework on which all individual machines may be ordered, related, and understood."

[27]D. K. Darnell, "Information Theory: an Approach to Human Communication," in Budd and Ruben, eds., Approaches to Human Communication, 158.

[28]Ibid. Shannon's assumptions about the actual and attributed choices of the human and electronic senders and receivers of messages are criticized in ibid., 160-61. Cf. R. L. Ackoff and F.E. Emery, On Purposeful Systems (Chicago: Aldine-Atherton, 1972), 11: "Humans are typically treated by systems reseaerchers as machines, or as entities that respond to stimuli in a mechanical way. Sometimes the human is completely excluded. In his model of the communication process," for example, "Shannon excludes the human communicator."

[29]Lee Thayer, Communication and Communication Systems...(Homewood, Ill.: Irwin, 1968), 116. Italics his.

[30]Ruben, "General Systems Theory," 109. Cf. Thayer, Communication and Communication Systems, 116-17.

[31]J. G. Miller, Living Systems (New York: McGraw-Hill, 1978), 11. This magnum opus answers every question anyone can reasonably ask about systems theory.

[32]Colin Cherry, On Human Communication; a Review, a Survey, and a Criticism (3d ed.; Cambridge, Mass.: M.I.T. Press, 1978), 50-51.

[33]R.V.L. Hartley, "Transmission of Information," Bell System Technical Journal, 7 (1928), 538. This kind of physicalistic thinking pervades the entire article, and has never disappeared from information science.

[34]Ibid., 542, adding that "such functions are also typical of other modes of communication."

[35]See G. Brockstra, "On the Foundations of GIT...," Cybernetics and Systems, 11 (1980), 143; and Miller, Living Systems, 11-12.

[36]Cherry, On Human Communication, 51.

[37]Robert M. Hayes, "Information Science Education," in the ALA World Encyclopedia, 249. For another of his process-oriented definitions of information as data, see R.M. Hayes and J. Becker, Handbook of Data Processing for Libraries...(New York: Becker and Hayes, 1970), 745-47, which I have already opposed in my Oral Antecedents of Greek Librarianship (Provo, Ut.: Brigham Young University Press, 1978), xvi-xvii.

[38]Shera, "Philosophy of Librarianship," 316. Cf. my article, "The Immateriality of Information," Journal of Library History, 11 (1976), 297-315.

[39]Kenneth E. Boulding, The Image (Ann Arbor, Mich: Univ. of Mich. Press, 1959), 16. Cf. also the rather devastating criticism of the extreme subjectivity of science in his Economics as a Science (New York: McGraw-Hill, 1970), 117-22.

[40]All quotations in this section, unless footnoted otherwise, are from Kaplan, "The Age of the Symbol," 13-15.

[41]This remark is like Whitehead's remark, also widely misunderstood, about the technique of naturalistic art, which is "more akin to the practice of physics, chemistry, and biology than is the practice of law," Alfred North Whitehead, Science and the Modern World ("Lowell Lectures," 1925; New York: Macmillan, 1962), 62-63.

[42]Cf. Kaplan, "The Age of the Symbol," 15: "Although...it is in intellectual terms that these [metascientific] disciplines become important, they also may become important in a secondary way through technology, for...it is form and structure that lie at the basis of both computer design and application." Italics mine.

[43]Shera, "Philosophy of Education," 316.

[44]J. H. Shera, "Formulate a Professional Philosophy," Library Journal, 88(1963), 50. Italics mine.